

# Contents

## Preface 2

## Chapter 1. Introduction 5

- Historical Perspective 5
- Description of Smoke and Obscurants 6
- Uses of Smoke and Obscurants 6
- How and Where To Use Smoke 6
- Categories of Smoke Operations 7
- Smoke Planning 7
- Operational Concept for Smoke and Obscurants 9
- Operational Continuum 10
- Spectrum of Conflict 11
- The Battlefield 11
- Battlefield Applications of Smoke 13
- Smoke Delivery Means 14
- Smoke Units 15

## Chapter 2. Threat 18

- Reconnaissance, Surveillance, and Target Acquisition 18
- Combined Arms Operations 20
- Threat Smoke Tactics, Techniques, and Procedures 20
- Threat Offensive Smoke Use 21
- Threat Defensive Smoke Use 22
- Commander's Considerations 23
- US Countermeasures to Threat Use of Smoke 25

## Chapter 3. Offensive Operations 27

- Historical Perspective 27
- Tactics 28

## Chapter 4. Defensive Operations 36

- Historical Perspective 36
- Tactics 37

## Elements of Defense 38

## Chapter 5. Other Tactical Operations 42

- Tactics 42
- Retrograde 42
- Relief in Place 43
- Passage of Lines 44
- Linkup Operations 44
- Breakout from Encirclement 45
- River Crossings 45
- Obstacle Breaching 46
- Special Conditions or Environments 46
- Deception 50

## Chapter 6. Sustainment Planning 51

- Maintenance, Supplies, and Logistics 52
- Fire Support and Security 53
- Personnel Sustainment 53

## Chapter 7. Visual-Infrared Obscurants 54-A

## Appendix A Smoke Planning 55

- Target Analysis Procedures 55
- Planning Documents 55
- Employment Matrixes 56

## Appendix B. Electro-Optical Systems 72

- Sensors and Effects 72
- Directed-Energy Weapons 76

## Appendix C. Means of Delivery 78

- Artillery Munitions 78
- Mortar Munitions 78
- Rockets 79
- Aircraft-Delivered Smoke 79
- Rifle Grenades 79
- Smoke Pots and Smoke Hand Grenades 80
- Generators 80

**Armored Vehicle Grenade Launchers 81**

**Vehicle Engine Exhaust System 81**

**Safety 82**

**Appendix D. US Smoke Organizations and Capabilities 83**

**Chemical Command and Control Headquarters 83**

**Smoke Generator Units 83**

**Chemical Unit Task Organizations 84**

**Capabilities 85**

**Appendix E. Smoke Support Sustainment Planning Tables 86**

**Smoke Pot Consumption 86**

**Fuel Consumption Tables 87**

**Ammunition Consumption Tables 88**

**Appendix F. Weather and Terrain 89**

**Weather 89**

**Terrain Effects 90**

**Appendix G. Obscurants and How They Work 92**

**Characteristics 92**

**Natural Obscurants 93**

**By-Product Obscurants 94**

**Artificial Obscurants 96**

**Appendix H. Probability of Detection 97-A**

**References 98**

**Glossary 99**

**Index 103**